

COLLEGE OF AGRICULTURE  
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DEPARTMENT OF BIOCHEMISTRY

September 8, 1955

Dr. Rosalind Franklin  
Birkbeck College Crystallography Lab.  
University of London  
London, England

Dear Rosalind:

Please accept my apologies for not answering sooner but your letters arrived during my vacation period. Furthermore I haven't been able to locate any pea streak virus. The material we had was grown several years ago by Stahmann in his greenhouse and he is in Europe for the rest of the year. I searched his refrigerators without success. Professor Hagedorn expects to grow some for his pathology work but I don't expect that this will be ready soon. In the meantime I am keeping my eyes open for other rod-shaped viruses that may become available. At present most of the plant pathologists here are working with spherical viruses or on studies (e.g. nutrition, host range) which don't require very much material or very pure preparations.

With reference to electron microscope evidence for internal structure in TMV, I believe there is none. There are only a very few good published pictures and they show no internal details at all. Williams has good shadowed pictures in Bioch. Biophys. Acta 8, 227(1952) and Hall has a stained, unshadowed picture in J. Biophys. Biochem. Cytol 1, 1(1955). The picture I enclose is typical of the pictures we have taken. Rest assured, however, that when all your results are published some enterprising electron microscopist will find grooves.

I enjoyed reading the manuscripts you sent very much and I particularly appreciated receiving them in advance of their publication. (Wisconsin is in the crystallographic hinterlands) While I'm no judge, it does seem to me that your evidence for internal structure is very good and could at present be obtained in no other way. In particular I had been somewhat unhappy that our electron micrographs always gave a diameter which appeared to be closer to 180A than to 150A; while the distance between touching particles seemed to be 150-160A. At least <sup>your,</sup> ~~this~~ is a more comforting explanation than lack of resolution. ^

I hope that when you next hear from me you will get virus as well as words.

Best wishes.

Sincerely,



Paul Kaesberg  
Assistant Professor of Biochemistry  
Electron Microscope Laboratory  
9 Soils Building

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